REMARKS

I. Introduction

By the present Amendment, claims 1, 10, and 15 have been amended. No claims have been added or canceled. Accordingly, claims 1-23 remain pending in the application. Claims 1, 9, 10, and 15 are independent.

II. Office Action Summary

In the Office Action of February 10, 2006, a comment was made regarding the Specification. Claims 1-3, 5, 7-12, 14-17, and 19-22 were rejected under 35 USC §102(e) as being anticipated by U.S. Patent Application No. 2005/0281516 published to Okazaki et al. ("Okazaki"). Claim 23 was rejected under 35 USC §103(a) as being unpatentable over Okazaki. These rejections are respectfully traversed.

The Examiner's indication that claims 4, 6, 13 and 18 would be allowable, if rewritten in independent form to include all the limitations of the base claim and any intervening claims, is noted with appreciation.

III. The Specification

The Office Action references the Specification on page 2, and questions whether component 100 has been described. The Office Action further requests that Applicants provide the page and line numbers where this component is described.

It is not clear whether this is an objection or a rejection to the Specification. Nonetheless, Applicants respectfully submit that this particular component is described in the Specification. See, for example, page 16, lines 20-22.

IV. Rejections under 35 USC §102

Claims 1-3, 5, 7-12, 14-17, and 19-22 were rejected under 35 USC §102(e) as being anticipated by Okazaki. Regarding this rejection, the Office Action indicates that Okazaki discloses, in at least Fig. 23, an exposure apparatus that includes all of the limitations set forth in the claimed invention. Applicants respectfully disagree.

As amended, independent claim 1 defines a method of illumination that comprises the steps:

> emitting light from each of a plurality of light sources separately arranged in a one-dimensional or two-dimensional form;
>
> spatially decomposing via a light integrator the light emitted from each of the plurality of light sources, and thus generating a multitude of secondary light source images; and
>
> overlapping via a condenser lens the light emitted from the multitude of generated secondary light source images, and thus illuminating a region to be illuminated.

According to independent claim 1, light is emitted from each of a plurality of light sources that are separately arranged in a one-dimensional or two-dimensional manner, and a light integrator is used to spatially decompose the light emitted from the light sources. This results in a multitude of secondary light source images. Next, a condenser lens is used to overlap the light emitted from the secondary light source images in order to illuminate a region.

As to the requirements for supporting a rejection under 35 U.S.C. §102, Applicants first point out that the burden falls on the Examiner to establish a *prima facie* case of anticipation. See *In re Sun*, 31 USPQ2d 1451, 1453 (Fed. Cir. 1993). As emphasized by the court in *In re Warner*, "[t]he precise language of 35 U.S.C. 102 that "a person shall be entitled to a patent unless," concerning novelty and unobviousness, clearly places a burden of proof on the Patent Office which requires

it to produce the factual basis for its rejection of an application under sections 102 and 103. . . ." (Emphasis added) 154 USPQ 173, 177 (C.C.P.A. 1967), *cert. denied*, 389 U.S. 1057 (1968).

In order to qualify as an anticipatory reference, a prior art reference must necessarily disclose each and every element recited in the claimed invention. This disclosure must also be made with a sufficient level of clarity. See *Motorola, Inc. v. Interdigital Tech. Corp.*, 121 F.3d 1461, 43 USPQ2d 1481, 1490 (Fed. Cir. 1997). See also *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990) ("[T]he [prior art] reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." (citations omitted)). As further stated by the Federal Circuit, "Although this disclosure requirement presupposes the knowledge of one skilled in the art of the claimed invention, that presumed knowledge does not grant a license to read into the prior art reference teachings that are not there." (Emphasis added) *Id.*

Reference is further made to the decision of *In re Robertson*, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim be found, either expressly or inherently described in a single prior art reference. As noted by that court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." (Emphasis added). Moreover, the court pointed out that inherency, however, may

not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. See also *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981) ("Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.")

Finally, the alleged anticipatory reference must be enabling. In particular, it is the claimed invention that must be enabled within the reference and not any other teachings disclosed by the reference. See *Elan Pharms. Inc. v. Mayo Found. for Med. Educ. & Research*, 346 F.3d 1051, 68 USPQ2d 1373, 1375-76 (Fed. Cir. 2003) ("To serve as an anticipating reference, the reference must enable that which it is asserted to anticipate."); and *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354, 65 USPQ2d 1385, 1416 (Fed. Cir. 2003) ("A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled.").

The Office Action alleges that Okazaki anticipates independent claim 1. However, the Office Action does not provide any support for this rejection. The Office Action appears to only indicate that the reference to discloses an illumination system having a plurality of light sources, a light integrator, and a condenser lens for overlapping the light. The light sources are described as having a shape analogous to the shape of the region to be illuminated. The Office Action further alleges that a DMV is used to modulate the light. Applicants note, however, that independent claim 1 is a method claim which recites several steps. The Office Action provides no indication of how these steps are performed or described in the reference.

Notwithstanding this fact however, Applicants note that independent claim 1 recites features that are not shown or suggested by the art of record. For example,

Okazaki does not appear to disclose a light integrator comprised of a rod shaped lens as the Office Action alleges. Applicants presume that the "light integrator 114" of Okazaki is alleged as being equivalent to the light integrator recited in the step of spatially decomposing, because no direct correspondence was made. This is clearly not the case.

At the outset, Applicants respectfully submit that the reference is being misconstrued in an effort to read on the claimed invention. Review of Okazaki has revealed that reference numeral 114 does not refer to a light integrator. Rather, reference numeral 114 refers to a lens array that is provided with a plurality of microlenses corresponding to the light emission points of multi-cavity lasers. See column [0186], lines 7-9. Next, independent claim 1 clearly recites that the light integrator spatially decomposes light emitted from each of the plurality of light sources in order to generate a multitude of secondary light source images. In contrast, Okazaki indicates that the lens array receives light from the rod lens 113 and then makes this light parallel using respective microlenses contained therein. Okazaki also fails to provide any disclosure for secondary light source images as set forth in the claimed invention. The secondary light source images are separate and distinct from the secondary light sources. The secondary light source images are defined as dimensionally narrowed points that are formed at the exit end faces by an effect of the convex spherical lens at the incident face 1311. See page 18, lines 2-6 of the Specification. Okazaki does not provide any disclosure for such a feature.

It is therefore respectfully submitted that independent claim 1 is allowable over the art of record.

Claims 2-8 depend from independent claim 1, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim

1. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

Independent claim 9 defines a method of illumination wherein light emitted from each of a plurality of light sources is applied onto an illumination target region. The light sources are separately arranged in a one-dimensional form and applied such that at least 30% of the energy of the light emitted from each of the light sources arrives at the illumination target region without overstepping an illuminance non-uniformity range of +/- 10% in the illumination target region. The Office Action is completely silent on the features recited in independent claim 9 and provides no evidence as to how, or why, this claim is anticipated by Okazaki.

Applicants therefore respectfully submit that independent claim 9 is allowable over the art of record because features recited therein are not disclosed by the art of record.

Independent claim 10 defines a method of light exposure that comprises the steps of:

> emitting light from each of a plurality of light sources separately arranged in a one-dimensional or two-dimensional form;
>
> spatially decomposing via a light integrator the light emitted from each of the plural light sources, and thus generating a multitude of secondary light source images; and
>
> overlapping via a condenser lens the light emitted from the multitude of generated secondary light source images, and thus illuminating an illumination target region having a pattern to be exposed;
>
> wherein the illuminated pattern to be exposed is exposed by projecting transmitted or reflected light onto an exposure target region of an exposure target object via projection optical system.

Similar to independent claim 1, independent claim 10 recites a step of "spatially decomposing via a light integrator the light emitted from each of the plural

light sources, and thus generating a multitude of secondary light source images." As previously discussed, Okazaki does not provide a light integrator as set forth in the claimed invention. Rather, reference numeral 114 (identified in the Office Action) corresponds to a lens array. Further, Okazaki does not provide secondary light source images as set forth in the claimed invention. Okazaki simply fails to provide any disclosure for the step of spatially decomposing as recited in independent claim 10.

It is therefore respectfully submitted that independent claim 10 is allowable over the art of record.

Claims 11-14 depend from independent claim 10, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 10. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

Independent claim 15 defines a light exposure apparatus that comprises, in part:

> a light integrator for spatially decomposing the light condensed by said condensing optical system, and thus generating a multitude of secondary light source images; and
>
> a condenser lens for overlapping the light rays emitted from the multitude of secondary light source images generated by said light integrator, and thus illuminating an illumination target region having a pattern to be exposed; and

As previously discussed, Okazaki fails to provide at least a light integrator as set forth in the claimed invention.

It is therefore respectfully submitted that independent claim 15 is allowable over the art of record.

Claims 16-23 depend from independent claim 15, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 15. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

V. Rejections under 35 USC §103

Claim 23 was rejected under 35 USC §103(a) as being unpatentable over Okazaki. The Office Action admits that Okazaki fails to disclose detecting the intensity of the light emitted from the light sources. Nonetheless, the Office Action alleges that one skilled in the art would be motivated to detect the intensity of the light to control the exposure.

As previously indicated, claim 23 is believed allowable for at least the reasons previously indicated with respect to independent claim 15. Further, the Office Action fails to indicate how, or why, one skilled in the art would be motivated to modify Okazaki in an effort to arrive at the claimed invention, despite complete silence on part of reference. Even if such motivation were to exist, the reference would still fail to disclose, or suggest, features recited in independent claim 15, from which claim 23 depends.

It is therefore respectfully submitted that claim 23 is allowable over the art of record.

VI. Conclusion

For the reasons stated above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a Notice of Allowance is believed in order, and courteously solicited.

If the Examiner believes that there are any matters which can be resolved by way of either a personal or telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

Docket No. 520.44257X00
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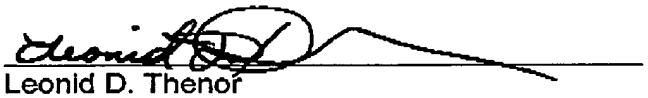
AUTHORIZATION

Applicants request any shortage or excess in fees in connection with the filing of this paper, including extension of time fees, and for which no other form of payment is offered, be charged or credited to Deposit Account No. 01-2135 (Case: 520.44257X00).

Respectfully submitted,
ANTONELLI, TERRY, STOUT & KRAUS, LLP.



Leonid D. Thenor
Registration No. 39,397

LDT/vvr
1300 N. Seventeenth Street
Suite 1800
Arlington, Virginia 22209
Tel: 703-312-6600
Fax: 703-312-6666

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